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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/814,342	04/01/2004	Yuu Inatomi	43888-309	5354

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EXAMINER	
DOVE, TRACY MAE	

ART UNIT	PAPER NUMBER
1795	

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12/14/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/814,342	INATOMI ET AL.	
	Examiner	Art Unit	
	Tracy Dove	1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 November 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,4 and 6-11 is/are pending in the application.
- 4a) Of the above claim(s) 1,2,4,6 and 7 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 8-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>7/25/07;10/2/07</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This Office Action is in response to the communication filed on 11/20/07. Claims 1, 2, 4 and 6-11 are pending. Claims 1, 2, 4, 6 and 7 are withdrawn as being directed toward a nonelected species. Applicant arguments filed on 7/9/07 have been considered, but are moot in view of the new grounds of rejection and the withdrawal of claims 1, 2, 4, 6 and 7. This Action is FINAL, as necessitated by amendment.

Information Disclosure Statement

The information disclosure statements (IDS) submitted on 7/25/07 and 10/2/07 have been considered by the examiner.

Election/Restrictions

Claims 1, 2, 4, 6 and 7 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected species, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on 11/20/07. Applicant argues it would not be an undue burden to search all of the organic compounds encompassed by the claimed invention. However, the numerous organic compounds encompassed by the claimed invention are classified in multiple areas and would place an undue search burden on the Examiner. Therefore, the species election is proper and made FINAL.

Applicant elected formula 8 (page 10 of the specification) as the organic compound species and a carbonaceous material as the substrate species. Applicant stated in the election of 11/20/07 that claims 8-11 are readable on the elected species.

Claim Objections

Claims 9-11 are objected to because of the following informalities: the dependent claims are in improper form. Claim 8 recites "an electrode" and claims 9-11 recite "the electrochemical device in accordance with claim 8", which is improper. The claims should be amended to clearly recite what is being claimed (an electrode or an electrochemical device). Note "for an electrochemical device" in claim 8 is an intended use limitation. Appropriate correction is required.

Claim 11 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claim 11 does not further limit the electrode structure of claim 8.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 8-11 are rejected under 35 U.S.C. 102(e)/103(a) as being anticipated by, and alternatively unpatentable over, Nakahara et al., US 6,866,964.

Nakahara teaches a secondary battery (electrochemical device) comprising at least a positive electrode, a negative electrode and an electrolyte, wherein an active material in at least one of the positive electrode and the negative electrode contains a radical compound (2:20-25). Examples of the radical compound include formulas (A1) and (A2) in column 3, lines 5-18. The radical compound may be represented by formula (A5) wherein all of the alkyls R_1 to R_4 are methyl (4:35-67). In formula (A5), X_1 and X_2 may both be an aliphatic group that is saturated or unsaturated, substituted or unsubstituted, and straight, cyclic or branched. The radical compound may be represented by formula (A8) wherein all of the alkyls R_1 to R_4 are methyl and X is an aliphatic group (5:50-6:16). The negative electrode collector (substrate) may be carbon and the active material of the negative electrode may be chemically bound to the negative collector. The positive electrode collector (substrate) may be carbon and the active material of the positive electrode may be chemically bound to the positive collector (25:53-58). See also formula (A30) at column 30. Thus the claims are anticipated.

The claims are alternatively unpatentable. Nakahara does not explicitly teach the elected species of Formula 8 in the present specification. However, Nakahara teaches the radical compound may be represented by formula (A8) wherein X is an aliphatic group. The aliphatic group contained in the elected species is one of multiple aliphatic groups. A 35 U.S.C. 102/103 rejection is considered proper where it is unclear if the reference teaches the claimed elected invention with sufficient specificity. The elected radical compound of formula 8 is at least

obvious in view of the teachings by Nakahara because no criticality has been shown for the specific aliphatic group of the claimed elected invention.

*

Claims 8-11 are rejected under 35 U.S.C. 102(b)/103(a) as being anticipated by, and alternatively unpatentable over, Nakahara et al., WO 02/082570 and/or under U.S.C. 102(e)/103(a) as being anticipated by, and alternatively unpatentable over, Nakahara et al., US 7,226,697.

Note US 7,226,697 will be used to discuss the teaching of both Nakahara references since WO 02/082570 was published in Japanese.

Nakahara teaches a charge storage device such as a battery wherein a positive electrode comprises a nitroxyl compound having a structure of a nitroxyl cation moiety represented by formula (I) in an oxidized state while having a structure of a nitroxyl radical moiety represented by formula (II) in a reduced state. The reaction is represented by formula (A) (abstract). Preferably, the nitroxyl compound is a compound containing a cyclic structure represented by general formula (1a) in an oxidized state. In formula (1a), R1 to R4 may each represent an alkyl having 1 to 4 carbon atoms and X represent a bivalent group forming a five-to seven-membered ring. Formula (1a) may be part of a polymer where X is part of a side chain in the polymer or of a main chain of the polymer. The nitroxyl compound is particularly preferably a polymer having a side chain comprising the structure represented by formula (1a) (2:10-30). A preferred nitroxyl compound is represented by formula (1) in column 3. The negative electrode collector (substrate) may be carbon and the active material of the negative electrode may be chemically bound to the negative collector. The positive electrode collector (substrate) may be carbon and

the active material of the positive electrode may be chemically bound to the positive collector (8:49-56). Thus the claims are anticipated.

The claims are alternatively unpatentable. Nakahara does not explicitly teach the elected species of Formula 8 in the present specification. However, Nakahara teaches the nitroxyl compound may be represented by formula (1) wherein formula (1) is part of a polymer. A 35 U.S.C. 102/103 rejection is considered proper where it is unclear if the reference teaches the claimed elected invention with sufficient specificity. The elected radical compound of formula 8 is at least obvious in view of the teachings by Nakahara because no criticality has been shown for the specific polymer group (repeat unit structure) of the claimed elected invention.

Response to Arguments

Applicant's arguments filed 7/9/07 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

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however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tracy Dove whose telephone number is 571-272-1285. The examiner can normally be reached on Monday-Thursday (9:00-7:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Pat Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

December 11, 2007


TRACY DOVE
PRIMARY EXAMINER